NB. People who are negative now may become positive at any time. If the patient's conditions deteriorates, send extra sputum smears at any time.

If the patient becomes asymptomatic with non-TB treatment, he should not be treated for TB. Tell the patient to come back to the BHU if "chest symptoms" develop. Clearly explain what "chest symptoms" are.

Category 3: Extra Pulmonary Cases of TB

When diagnosis has been confirmed by a TB specialist in the programme, start on twelve months standard treatment (see section 2.2.2)

Category 4: Children with TB

Children should be referred to a TB specialist before treatment is started so that the diagnosis and medicine dosage can be checked.

If they produce sputum and are sputum positive, treat as category 1 with short course regimen (see 2.2.1).

If they are are sputum negative, treat with the standard regimen (see section 2.2.2) unless the TB specialist advises short course regimen.

A growth chart must be kept to monitor growth for all children less than 5 years of age.

Category 5: Pregnant women with TB

If the patient is pregnant, see section 2.4

2.2 TREATMENT REGIMENS

2.2.1 Short Course Regimen for Sputum Positive Pulmonary TB

The short course regimen has two phases, and lasts **8 months**

Phase 1 (Intensive phase) for the first 2 months

Streptomycin (S):	Daily intramuscular injections
Rifampicin (R):	Daily capsules by mouth
Pyrazinamide (Z):	Daily tablets by mouth
Isoniazid (H):	Daily tablets by mouth

Phase 2 (Maintenance phase): for the 6 months following phase 1

Isoniazid (H)	Daily by mouth, often as a combined tablet with:
Thiacetazone (T)	Daily by mouth

For recommended dosages, please consult tables 1 and 2

In Phase 1, the patient must come every day to the BHU to receive a streptomycin injections and to swallow the prescribed medicines under the health worker's direct control. This supervised treatment lasts for the first two months.

When the patient cannot come daily to the BHU, daily supervision can be done at the patient's home. A BHU staff member or a Community Health Worker can visit the patient's home, give the streptomycin injection and the patient will swallow in front of him/her the complete daily treatment.

If the patient cannot come every day during the intensive phase and no health worker can visit, only then should he/she be supplied weekly with medicines and monitored closely for compliance.

During Phase 2 the patient comes to the BHU every week to obtain anti-TB medicines. These medicines are self-administered. If weekly visits are not possible then the patient should come every two weeks. On no account should he/she come less frequently.

2.2.2 Standard Treatment Regimen for Sputum Negative Pulmonary & Extra-Pulmonary Cases of TB

The standard regimen has two phases, and lasts 12 months.

Scheme of Treatment:

Phase 1: Intensive Phase for first 2 months

Streptomycin (S): Daily intramuscular injection
Isoniazid (H): Daily tablets by mouth
Thiacetazone (T): Daily tablets by mouth
(Isoniazid and Thiacetazone are usually in a combined tablet).

Phase 2: Maintenance Phase for the 10 months following phase 1

Isoniazid (H): Daily tablets by mouth
Thiacetazone (T): Daily tablets by mouth
(Usually combined tablets).

As with short course treatment, Phase 1 should be supervised daily at the BHU or the patient's home. Only if this is not possible should the medicines be self-administered. The patient will be asked to come and collect his medicines at least every two weeks.

TABLE 1: ESSENTIAL MEDICINES AGAINST TUBERCULOSIS

Recommended dosages

Drug	Abbreviation	Daily Dose mg/Kg	Daily Dose maximum dose (mg)
Isoniazid	H	5*	300***
Rifampicin	R	10	600
Pyrazinamide	Z	30	2000
Streptomycin	S	15	1000
Ethambutol	E	25**	1200
Thiacetazone	T	2.5	150

* 10 in children
** 15 after two months
*** as single dose. If combined tablet used e.g. Rifinah, the maximum dose is 400 mg.

TABLE 2: RECOMMENDED DOSAGES OF TB DRUGS

			WEIGHT OF PATIENTS IN KGs/No of Tabs/Cps/mls						
DRUGS	PREPARATION	mg/kg	0-9	10-15	16-25	26-35	36-45	46-55	56+
Rifampicin (R)	300 mg	10 mg	-	-	-	1	1	2	2
Rifampicin (R)	150 mg	10 mg	-	1	1	2	3	3	4
Rifampicin (R) + Isoniazid (H)	300 mg 150 mg	10 mg 5-10mg	-	-	-	1	1	2	2
Rifampicin (R) + Isoniazid (H)	150 mg 100 mg	10 mg 5-10mg	*	1	1	2	3	3	4
Pyrazinamide (Z)	500 mg	30 mg	*	0.5	1	2	2	3	4
Streptomycin (S)	1000 mg in 5 ml	15 mg	*	1 ml	2 ml	2 ml	3 ml	4 ml	5 ml
Isoniazid (H)	300 mg	5-10mg	-	-	-	0.5	1	1	1
Isoniazid (H)	100 mg	5-10mg	*	0.5	1	1.5	2	2.5	3
Thiacetazone (T) + Isoniazid (H)	150 mg 300 mg	2.5 mg 5-10mg	-	-	-	0.5	1	1	1
Thiacetazone (T) + Isoniazid (H)	50 mg 100 mg	2.5 mg 5-10mg	*	0.5	1	1.5	2	2.5	3
Ethambutol (E) FIRST 2 MONTHS	400 mg	*** 25 mg	***	***	1	2	2.5	3	3
FOLLOWING MO.		15 mg			1	1	1.5	2	2

* For children who weigh less than 10 Kg., the dosages must be worked out exactly, according to their body weight. Their weight must be checked regularly and dosages recalculated.

** Reconstitute one vial of streptomycin with 4.5 ml water for injection; this produces 5 ml. of solution containing 1000 mg. (1 g.) ie 200 mg/ml.

*** Children under 10 and adults over 60 years old should not be given ethambutol because they may not notice eye problems, which indicate drug toxicity.

2.3 Contra-Indications and Side-Effects of TB Medicines

Proper daily dosage of drugs reduces the occurrence of toxic side-effects. Make sure the dosage of drugs is correct especially in underweight subjects.

Some drugs have absolute contra-indications where they must not be used. These are:

Drug	Absolute contra-indication
Streptomycin	Pregnancy (in the last three months)
Isoniazid	Acute liver disease of any sort, including jaundice
Thiacetazone	Jaundice
Rifampicin	Jaundice
Pyrazinamide	Jaundice
Ethambutol	Children under ten and patients over 60

Side effects of individual drugs

Streptomycin

Problems with hearing and balance
Hypersensitivity reactions
Renal impairment

Isoniazid

Hypersensitivity
Peripheral neuritis (treat with pyridoxine 20 mg/day)

Thiacetazone

Hypersensitivity
Gastro-intestinal symptoms
Jaundice
Steven-Johnson Syndrome

Rifampicin (NB in normal doses the urine will be red)

Gastro-intestinal symptoms
Influenza-like symptoms
Liver impairment and jaundice
Purpura due to thrombocytopenia

Pyrazinamide

Nausea and vomiting
Liver impairment and jaundice
Arthralgia, gout

Ethambutol

Optic neuritis
Visual defects

If **minor side effects** appear the MO must check if the patient has received the right dosage and correct if necessary. If the dosage is correct, and side effects are minor, (nausea, headache, gastro-intestinal disturbances, etc) TB treatment should not be interrupted. Symptomatic treatment (aspirin, magnesium trisilicate, etc.) should be prescribed, and the patient reassured.

If a **major side effect** occurs, the causative medicine should be stopped immediately, if known, and replaced by another medicine. If you do not know which medicine is causing the problem, stop all medicines should be stopped and refer the patient immediately to the TB referral centre or TB specialist in the programme.

If a **hypersensitivity reaction** occurs (rash, itching and fever) in the intensive phase stop the treatment and refer the patient. If a hypersensitivity reaction occurs soon after starting the maintenance phase of short course, Thiacetazone is most likely to be the cause; so stop it and replace it with Ethambutol.

NB. In order to avoid side effects with streptomycin limit the total doses give in any one year to 60.

2.4 Anti-tuberculosis Drugs and Pregnancy

The only drug which must not be administered during pregnancy is streptomycin at the 7th, 8th and 9th month.

If the patient is **sputum positive**, treat with short course regimen (section 2.2.1) but do not give streptomycin in the last three months of pregnancy; replace with ethambutol.

If the patient is **sputum negative**, do not start treatment but keep the patient under observation and check the sputum every month. If the sputum becomes positive, treat as above, otherwise wait until after the baby is born to start standard treatment.

If the patient is an **extra-pulmonary** case, refer her to the TB specialist in the programme if her conditions are serious, otherwise wait to start treatment until after the baby is born.

2.5 Anti-tuberculosis Drugs and Breast Feeding

No TB medicines are contra-indicated in women who are breast feeding. Anti-tuberculosis drugs given to the mother who has tuberculosis, can protect the breast-fed child, so treatment should continue. (Note: Streptomycin is not absorbed by the infant's gut).

Breast feeding should not be stopped, but the Health Worker should carefully explain to the mother that she may infect the baby if she coughs or breathes over him; she must be especially careful to cover her mouth (with her head-scarf) when she breast feeds and must never cough over the baby.

2.6 BCG for Child contacts of Sputum Positive TB Patients

2.6.1 BCG for the baby of a mother with TB

If the diagnosis of TB in the mother was made during pregnancy and the mother is sputum negative when the baby is born, the baby should be given BCG at birth.

If the mother is diagnosed later: if she is sputum negative give BCG to the baby immediately. If she is sputum positive, wait and observe the baby carefully; check the weight every month; if the baby becomes unwell and does not gain weight normally, do a Mantoux and treat the baby for TB if it is positive. If the baby is gaining weight and well after three months, give BCG.

2.6.2 BCG for Child Contacts of Sputum Positive TB Patient

All child contacts of sputum positive TB patients who do not have a BCG scar, nor any symptoms of TB (see section 1.4), should be given a BCG.

2.7 Place of Treatment

There are two places where patients may be treated: at the BHU (ambulatory treatment), or in the TB Referral Hospital (hospital treatment).

2.7.1 Ambulatory Treatment

The vast majority of patients will be treated at the BHU.

In ambulatory treatment, persons with tuberculosis go to the BHU where the diagnosis was made. All their records will be kept at this BHU. (For details of patient registration recording and reporting, please see section 4). They will be given anti-tuberculosis drugs at the BHU according to either the Standard Treatment Regimen or the Short Course Regimen (see section 2.2), and wherever possible during the intensive phase, the patient should be on daily supervised treatment either at the BHU or his home.

If supervised treatment is not possible during the intensive phase, the medicines should be given to the patient weekly. Great care must be taken at the start of treatment to ensure good compliance (see section 3 on health education). Also someone in the family must be taught to give the streptomycin injections and to sterilize the equipment properly. The used vials of streptomycin should be brought back to the BHU each week before more are given, together with disposable syringes if they are being used. A compliance check at the patient's home should be carried out during the first month to ensure the patient is taking the medicines properly. (See section 2.8 on monitoring treatment.)

2.7.2 Hospital Treatment

Hospital treatment for tuberculosis is **restricted to the following patients**:

- Those with other acute or chronic diseases, for example diabetes, liver disease, kidney diseases, etc.
- Those who need emergency care such as those who have serious quantities of blood in the sputum (haemoptysis of more than one cup of blood), spontaneous pneumothorax, etc.
- Those with serious toxic side effects from the TB medicines.
- Those with proved multiple drug resistance.
- Those with miliary tuberculosis and tuberculosis meningitis.

The MO will decide if the patient is to be referred to the Hospital. Except in emergencies, he should consult the TB specialist in the programme.

2.8 Monitoring Treatment

2.8.1 Sputum Positive Pulmonary Patients

Patients on short course treatment will be checked at least every 2 months by sputum smear, during the whole of the short course. Three specimens should be taken each time as described in case-finding in section 1.1.

If **after two months of treatment the smear is still positive,** continue with the short course regimen as normal (i.e. change to maintenance phase medicines after two months of intensive phase), but check the sputum again after one month. If this sputum is still positive, sputum should be sent for culture and drug sensitivity testing to the referral laboratory; see section 2.13.

If the patient's treatment is not supervised during the intensive phase, a home visit should be done in the first month to check drug compliance (whether the patient is taking his medicines properly). All the tablets found in the house should be counted and checked against the card and the patient should be asked exactly what he is taking and when. If the patient is taking Rifampicin ask for a urine specimen. The urine colour should be checked; it should be red if rifampicin is being taken properly.

If he is not taking the medicines properly, find out why (side effects? mis-understanding? etc.). Spend time to explain carefully the importance of taking all the medicines correctly. Treat side-effects if minor (aspirin for arthralgia etc). Always make sure the dosage is correct for the patient's weight.

If there are major side effects, see section 2.4.

Always record home visits, problems etc on the patients record card (see section 4.4)

2.8.2 Sputum Negative Pulmonary Patients

Patients on standard regimen should be checked every 2 months with **sputum smear**, more often if problems are suspected.

- **If the sputum becomes positive during the intensive phase**, restart on short course regimen, but replace streptomycin with ethambutol when 60 injections have been given.
- **If the sputum becomes positive during the maintenance phase**, send a sputum sample for culture and drug sensitivity testing (see section 2.13) and restart on short course, replacing streptomycin with ethambutol in the first two months.

Supervised treatment is mandatory with these patients

See section 4.3 for recording and reporting of these patients

X-Rays must be repeated and checked against the original X-Ray; this should be done every two months if there are signs of clinical deterioration, otherwise at least once during treatment and again at the end of treatment. Always make sure that all the previous X-Rays of the patient and details of treatment are available to the person reporting on the X-Ray.

2.8.3 Extra Pulmonary Patients

TB of the lymph nodes and skin is monitored by clinical examination

For **TB of the bones and joints and pericardium**, X-Rays should be repeated every two months. Again ensure all the previous X-Rays are available for comparison to the person reporting the X-Rays.

Patients suffering from **other types of extra pulmonary TB should be referred** to the hospital where the diagnosis was made, every 2-4 months.

2.9 Definition of Cured Tuberculosis

2.9.1 Sputum Positive Pulmonary TB

A person on short course regimen with initially positive sputum smears is cured if he/she completes the 8 months treatment and the sputum smears are continuously negative during the last three months. A patient who can no longer produce sputum for examination is considered cured when the course of treatment is completed. The last sputum examination should be done within the last month of treatment.

2.9.2 Sputum Negative Pulmonary TB

A person on standard regimen (with continuously negative sputum smears, if he/she is producing sputum) is cured when twelve months of treatment are completed.

2.9.3 Extra-Pulmonary TB

A patient on 12 months of standard treatment for extra pulmonary TB is cured when twelve months of treatment are completed.

For bone and joint TB an X-Ray film must also be compared to the previous ones, in order to decide whether the patient is cured.

2.10 Patients who Default on Treatment

A patient is considered defaulter when he or she has failed to keep the medicine collection appointment two weeks after the due date. If this happens the patient's treatment card is placed in the defaulter file.

If a patient fails to collect his drugs, a home visit by a BHU staff member or community health worker must be made to encourage the patient to return for treatment, as soon as possible after the due date for resupply is missed.

The reason for the default should be discussed with the patient and family and corrected if possible.

Information about the patients may be sent to the Village Administrator or Group Leader.

If the patient **defaults during the intensive phase** of the treatment, check the sputum and start the treatment again from the beginning, replacing streptomycin with ethambutol when 60 injections have been given.

If the patient defaults **during the maintenance phase for less than one month**, continue the treatment course up to the proper number of months.

If the patient defaults **during maintenance phase for more than one month**, a sputum examination must be done:

- **if this sputum is negative**, the maintenance phase should be continued until the treatment has been given for the correct number of months.
- **if the sputum is positive**, the intensive phase of treatment should be started again, but replacing streptomycin with ethambutol.

2.11 Lost Patients and Retreatment

Patients who default for more than three months should be discharged from the defaulter file as "lost".

If a lost patient returns to the BHU at any time with symptoms, recheck the sputum:

- if it is **positive**, send a sample for culture and sensitivity testing (see section 2.13), and restart on short course regimen from the beginning **under strict supervision**. If it is less than one year since he had streptomycin, substitute streptomycin with ethambutol in the intensive phase, when a total of 60 injections have been given.
- if it is **negative**, treat the patient with symptomatic non TB medicines. There is no point in retreating for TB on the basis of an X-Ray.

2.12 Suspected Treatment Failures and Drug Resistance

The first indication of a failure of treatment is continued positive sputum at the end of the second month of treatment, or when the sputum becomes positive after being negative. A check of patient's compliance is mandatory (see section 2.8) and daily supervised treatment is preferable.

The main reason for treatment failures is NOT drug resistance but irregularity in drug intake. However irregularity of drug intake may cause drug resistance

2.13 Culture and Drug Sensitivity Testing

2.13.1 How and When to take specimens

Any patient who is still sputum positive at the end of the 3rd month of treatment, or becomes positive after being negative, should have a sputum specimen sent to the referral laboratory for culture and sensitivity testing; relapses (see section 2.14 below) and patients who had been lost (see 2.11) should also have sputums sent for culture and sensitivity testing before retreatment is started.

One early morning specimen is adequate. It should be collected in a 50 ml centrifuge tube. If this is not available the ordinary sputum container can be used. An equal quantity of 1% solution of Cetyl Pyridinium Chloride (CPC) should be added and the specimen gently shaken. CPC keeps the sputum fluid and reduces contamination.The tubes should be sent as quickly as possible to the referral laboratory; they should be kept out of sunlight and extreme heat. The proper form should be carefully and completely filled in and sent with the specimen. (see section 4.2.2)

2.13.2 Waiting for the Results

Results will take at least 6 weeks and may take up to 3 months.

The patient should continue on the normal treatment regimen during this time, and direct smears checked monthly. **If these becomes negative, continue the normal course of treatment, regardless of the sensitivity results.**

2.13.3 Results of Culture and Sensitivity Testing

1) **Positive growth but no drug resistance or resistance to only one drug:**
Start again on supervised short course regimen, but use ethambutol instead of streptomycin if the patient has had streptomycin in the last year. If there is resistance to a drug, substitute it with ethambutol or thiacetazone.

If after a further 3 months, the smear is still positive, refer the patient to the referral hospital.

2) **Positive growth and resistance to more then one drug.**
Refer the patient immediately to the referral hospital.

3) **No growth obtained.**
Send another sputum specimen for culture and sensitivity after stopping all TB medicines for one week. Start again on short course regimen, but use ethambutol instead of streptomycin, when the patient has had 60 streptomycin injections in the last year. These patients must have **daily supervised treatment** during the intensive phase; if they cannot, then refer them and do not try to treat them at the BHU.

AFGHAN REFUGEE HEALTH PROGRAMME

TUBERCULOSIS CONTROL GUIDELINES

These guidelines refer to the organization of the Afghan Refugee (AR) Tuberculosis (TB) Control Programme at the Basic Health Unit (BHU) Level.

The following directives must be applied by all the Health Workers involved in the Afghan Refugee Health Programme (ARHP) in Pakistan.

Only a joint effort with a common basis can allow the Tuberculosis Control Programme to be effective.

The TB Control Programme has three main goals:

1 - to identify, treat and cure people with sputum positive pulmonary TB, and hence reduce the spread of TB in the community;

2 - to identify, treat and cure people with other forms of TB (i.e. pulmonary sputum negative and extra-pulmonary TB);

3 - to educate the Refugee Village (RV) community about the way TB is transmitted, prevented, diagnosed and cured, and hence to protect the community and family members of TB patients from infection.

2.14 Detection of Relapses

A relapse is a patient, who having successfully completed TB treatment becomes sputum positive again. Detection of relapses follows the original case-finding procedure (see section 1.)

Before starting any TB treatment, a sputum sample must be sent for culture and drug sensitivity testing (see section 2.13)

3. HEALTH EDUCATION

3.1 Role of Health Education

Tuberculosis is a very contagious disease. Health workers should tell people how the risk of TB infection can be reduced. They can do this at the clinic, during home visits, in talks with people at the bazaars, in schools or at mosques. They should try to involve religious and community leaders. Health education in the community is very important for prevention of spread of TB, to increase case detection and to improve compliance.

3.2 Prevention

The whole community should understand how TB is spread and how they can prevent it from spreading.

TB is spread by air when a person with pulmonary TB coughs and spits. His sputum is very infectious.

Encourage people to cover their mouth whenever they cough.

No-one should ever spit on the floor. They should use a spittoon and bury or burn the contents.

Anyone with a cough should sleep away from others (especially children) preferably in another room or at least at the opposite end of the room.

All children should be vaccinated with BCG. This should be done as soon as possible after birth.

Everyone especially children should eat well. People who are malnourished get TB more easily and more seriously.

3.3 Case Detection

Everyone in the community should be aware of the signs of the TB. Everyone with chest symptoms (see section 1.1.1) should go to the BHU for a sputum check. If someone in their family or neighbourhood has chest symptoms they should encourage them to go to the BHU. Anyone who does not go may be spreading TB among their family and friends. To control TB, every TB case must be found and treated.

3.4 Treatment and compliance

Only complete, daily treatment cures TB patients and stops the infection from spreading in the community. If everyone knows this they will encourage all patients to take their TB medicines properly for the full duration of the course. Taking medicines in incorrect dosage or for an inadequate length of time may cause temporary improvement in symptoms but does

not cure the patient completely; they can develop TB again but next time the medicines may not be so effective. A person who has taken his medicines properly for the full time , is cured and cannot spread TB to others.

3.5 Patient Education

Patient motivation and education should be a regular part of each contact with a TB patient. The BHU staff member should:

-Gain the active participation and understanding of the patient and his or her family members from the very first consultation. This includes explaining the importance of regular attendance, and listening to patients' problems.

- Keep patients' active participation by individual and group discussions during drug distribution.

- Ask them to bring all contacts with chest symptoms (see section 1.1.1) to the BHU for sputum checks, and all child contacts for BCG.

- Encourage regular patients to continue the full treatment course even though they may feel better after some months

4 ORGANIZATION, RECORDING & REPORTING

4.1 Organization of TB Activities at the BHU

4.1.1 The Medical Officer (MO) is responsible for the TB Programme in the BHU. In the SHUs the Dispenser is in charge, but he should be supervised by a MO from a nearby BHU assigned by the Field Supervising Medical Officer (FSMO).

Any problems related to the TB Programme should be referred to the FSMO or a TB specialist within the Programme.

Newly appointed MOs should be briefed by the outgoing MO or by the FSMO or TB specialist about the TB Programme before they start working.

4.1.2 All BHU's staff should be involved in TB case-finding and health education activities. Normally the sputum samples collected should be fixed in the BHU by the health worker who has been trained to make the smears (malaria supervisor, outreach worker or dispenser).

4.1.3 TB case-finding should be carried out in the BHU every day of the week. New TB patients should be registered and started on treatment as soon as results of the smears are received.

Whenever possible during the intensive phase, treatment should be supervised daily either in the BHU or the patient's home. The MO will designate which health workers should supervise the daily treatment for each patient.

A weekly TB day should be fixed in every BHU for drug distribution and follow-up of TB patients. The MO (or the Dispenser in the SHUs) should check the TB patients himself at least every week during the intensive phase and every two weeks during the following months. Medicines should not be distributed through relatives or friends.

4.2 Recording Sputum Specimens

4.2.1 Sputums for direct Microscopy

All sputum samples taken from patients suspected of having TB or those under treatment should be labelled with a BHU serial number.(ie the BHU identification code and the annual or monthly number)

Full information about the patients should be entered in the **BHU sputum register** (date of collection of samples, name, Family Head's name, age, sex, Refugee Village), and whether he/she is a new patient or already under treatment. The three samples given by each patient should be marked as A, B and C. The same information should be entered on the **dispatch list** which will be sent with the smears to the laboratory.

In the laboratory the same information should be entered in the **laboratory sputum register**, adding the laboratory serial number and date of receipt. When the results are ready, they will also be entered in the same lab. register and in the appropriate space on the dispatch list, which should be sent back to the BHU as quickly as possible - within one week at the most.

In the BHU, the results of sputum smears should be entered in the BHU sputum register and appropriate action should be taken.

4.2.2 Sputum for Culture and drug Sensitivity Testing

When sputum specimen are sent for culture and drug sensitivity testing, a different and more detailed form is filled in, which also includes information about type and duration of treatment. This form must always be filled in completely by the MO and sent with the specimen, so that suggestion for alternative treatment can be made in resistant cases. Note on the patient's treatment card when the specimen is sent. It takes 6 weeks to 3 months for the results to come back. (See section 2.13).

4.3 Establishment of Records for New TB Patients

4.3.1 TB Register

When a TB patient is put on treatment, his details and relevant informations should be entered in the TB Register.

Each patient is given a **TB registration number;** this is the BHU annual serial number followed by the year in which treatment was started (ie n./year) and this number must never be changed during the course of treatment.

At the beginning of every year a new TB register will be provided to each BHU. All patients still under treatment should be recorded in the first pages with the previous registration number. Then new patients will be entered as they are diagnosed and given a new year serial number, starting from 1/...The old TB Registers will be collected for evaluation.

Start a new page in the TB Register each month, but continue the serial numbers throughout the year.

In the column **"Type of Disease"**, under "Extra-Pulmonary", a code should be used : A for adenitis, B for bone and joint, I for intestinal, G for uro-genital, S for skin, H for heart, M for meningitis.

Carefully enter the information about the **type of patient**:

- **"new patients"** are those who have never been treated for TB before
- **"relapses"** are those patients who, having successfully completed a TB treatment course, become sputum positive again
- **"transfer-in"** are those patients who have been transferred to the BHU from another health facility in the Programme
- **"after being lost"** are those patients who, having previously failed to collect drugs for more than three months and been discharged as lost, come back to the BHU and are sputum positive.

The date the treatment started should be entered in the appropriate column. For "transfer in" patients the date the patient started treatment in the new BHU should be entered in the column "type of patient", and the date the treatment started in the previous BHU entered in the column "date of starting treatment".

The type of treatment (short course or standard) should be written in the proper column.

4.3.2 TB Treatment cards

Each new TB patient must also have a TB Treatment Card which is kept at the BHU. Full details of the patient and his treatment should be entered on this card, including his weight and his daily dosage of the medicines. All other relevant documents belonging to the patient (X-Rays, biopsy results etc.) should be kept with the patient's treatment card at the BHU.

4.3.3 Appointment Cards

All TB patients should also be given an Appointment card, which they keep with them. The due date for the next medicine collection should be entered on this card every time they visit the BHU

4.4 Patients Under Treatment

4.4.1 Treatment Register

Results of sputum examinations done during the course of treatment should be entered together with the date of sputum collection. If the patient is no longer producing sputum, record "N.S." (Non Sputum) and the date the sputum was requested.

Changes in treatment regimen and the reason (eg side effect) should be written in the proper column.

Every **defaulting period** (more than 15 days) should be clearly mentioned for the evaluation of the treatment regimens and of the Programme

4.4.2 Treatment Cards

If **treatment is supervised daily** the staff member should enter the date in the grid, each day. If the patient is not supervised on certain day (for example on Friday) but he is given the doses to take at home the date should still be entered on the grid but with the letters "U.S." (UnSupervised).

Record the **actual date** the patient comes in the appropriate column and the date his next appointment id due. If the patient fails to come for his medicines on time, record this by putting the actual date he does come and noting the total **days missed** on the card.

The **patient's weight** should be recorded every two months and the medicines dosages recalculated if necessary, the date and new dosage recorded using the "remarks" space if extra-room is required. The weight should be recorded in the appropriate section on both the front and the back of the card.

Changes in the treatment regimen and the reason must be recorded in both the register and on the patient's treatment card; so must **sputum test dates and results.**

For sputum negative patients dates of **repeat X-Rays** and the results should also be entered.

Dates and results of **culture and drug sensitivity test** if sent must also be entered.

Everything must be written on the card, then if staff change or a supervisor visits, they should be able to understand everything concerning each patient's TB treatment.

4.5 Discharging Patients from Treatment

The date treatment is stopped must be entered in both the TB Register and the patient's TB card. Remember that:

- "**treatment completed**" means that the patient is discharged and the full course of treatment has been completed;
- "**dead**" means all patients who died during the course of treatment from any cause. If the cause is known it should also be recorded;
- "**transferred-out**" are patients discharged from the BHU but transferred to another BHU or health facility within the ARHP;
- "**lost**" patients are those who fail to collect their drugs for three consecutive months.

4.6 Transferring Patients

4.6.1 Patients transferring in

Patients can only be transferred in from another health facility within the ARHP (see section 1.5 concerning diagnosis). Normally a new form would be made out for them, and their X-rays must be kept with the patient's cards at the BHU where they are now receiving treatment.

4.7.3 **Medicine Situation**

Every month the quantity of medicine received in the BHU, the quantity given to the patients and the balance of medicine in the store should be carefully entered. These data will be use to calculate the medicines needed in each BHU, on the basis of the number and type of patients under treatment.

AFGHAN REFUGEE HEALTH PROGRAMME
TUBERCULOSIS CONTROL GUIDELINES

1. TB CASE FINDING

1.1 Case-finding in Pulmonary TB by Sputum Smear Microscopy

The purpose of case finding is to identify the sources of infection in the community, in other words to find the cases of pulmonary tuberculosis discharging tubercle bacilli.

Case-finding activity must be permanent and must be carried out in all Basic Health Units (BHUs) as an important part of Primary Health Care.

The first step in case-finding is to interview people attending the BHU and contacts of TB patients in the Refugee Village (R.V.).

1.1.1 Categories of Persons with Symptoms suggesting Pulmonary TB

There are two groups of people who are most likely to have pulmonary tuberculosis and they must be examined to determine if they do. The greatest number of patients with pulmonary tuberculosis will be discovered by examining these people.

Group 1: Symptomatic

The "Symptomatic" group are people who come to a BHU and have one or more of the following **"chest symptoms"**:

- cough for two weeks or more;
- chest pain for two weeks or more;
- fever for two weeks or more;
- blood in the sputum (haemoptysis)

Weight loss is also a common symptom.

Group 2: Symptomatic Contacts

The "symptomatic contacts" are the people living in contact with people known to have pulmonary sputum smear positive tuberculosis and having one or more of the "chest symptoms" listed above.

1.1.2 The Role of Sputum Specimens in Detecting TB

The only means by which pulmonary TB can be detected with certainty is by examination of a sputum smear under a microscope.

If anybody fits into either of the two groups listed above, the health worker should ask for a sample of sputum and have a sputum smear done at the BHU. This should be sent to the laboratory for checking. The patient may be given symptomatic non-TB antibiotic treatment if needed and they must be asked to return for results of the sputum tests as soon as they are available.

Also remember a patient who is negative now may become positive in a few weeks or months. So if a patient who has previously had negative results comes back with deterioration of his symptoms, or no response to non-TB antibiotic treatment, repeat the sputums; direct microscopy is a simple test and it is the most reliable diagnostic tool.

1.1.3 Time of Sputum Collection

Samples of sputum should be collected from each person suspected of having TB at the following times:

1. One on the spot at the time of the first visit.
2. One early morning specimen (consisting of all sputum raised within one hour after rising) next morning.
3. One on the spot at the time that the early morning specimen is brought to the BHU.

1.1.4 Method of Sputum Collection

Sputum samples should be collected in open air. If for any reason this is not possible, they should be collected in a very well lighted and ventilated room.

The person should first rinse the mouth with clean water. It is better if the person has not yet eaten the first meal of the day.

A trained staff member must:

1- Explain to the patient the reason for examination, how to breathe deeply and cough so that the expectoration is from as deep down in the chest as possible.

2- Open a sputum container, keep the lid and give only the bottom part to the patient.

3- Stand behind the patient and ask the patient to hold the sputum container close to the lips, cough and spit into it.

4- Check the quality and the quantity of the sputum.

5- Close the sputum container securely, label it and store it for transport or fixing.

6- Wash hands very well with soap, water and spirit.

7- Record all requested data in the BHU's Sputum Register and on the Dispatch List. (See section 4.2.1).

8- Give the patient a new labelled container and proper instructions on how to collect the early morning specimen, how the container has to be closed and when to bring it back to the BHU.

1.1.5 Quality and quantity control of the sputum

The specimen must be at least 2-5 ml. It must contain solid (caseous) or purulent particles, not just saliva. If not enough sputum is obtained, or only saliva, the staff member should encourage the patient to spit again. The patient may need several minutes to produce a good sputum. In case of no expectoration at all, the container should be considered as used and must be disposed of properly. Gargles with salty water or steam inhalations may help the patient to produce sputum.

NB. If any specimen produced contains only saliva it should not be used but discarded and another specimen collected

1.1.6 Storage of Sputum Specimens and Slides Preparation

Sputum specimens should be stored in a cool and dark place. Storage time should not exceed one day. They should be fixed on a slide as soon as possible on the day of collection.

Each smear must be identified by a number as soon as it is made, written clearly with a diamond pencil; if this is not available, an indelible marker or wax pencil or labelled plaster can be used instead. The BHU identification code followed by the annual or monthly number should be used (see section 4.2.1).

The slide should be wrapped in paper to protect it from dust, sand and breakage, or put in a special slide box.

1.1.7 Disposal of Sputum Cups

Sputum cups must be properly disposed of, by burning, burying or sterilizing by soaking in 1% Phenol solution for 24 hours; on no account should sputum cups be thrown away where children or others may find them and pick them up.

1.1.8 Dispatch of Sputum Specimens

Special transport boxes will be provided. A dispatch list which identifies the sputum smears must always be sent in the box.

A staff member should verify for each box that:

- the total number of slides corresponds to that written on the dispatch list;
- the sputum number on each slide corresponds to the sputum number on the dispatch list;
- the dispatch list contains the requested information for each patient.

After this check is made, the staff member:

- marks the date of dispatch on the list;
- closes the transport box carefully;
- puts the list in an envelope and attaches it on the box.

1.1.9 Waiting for the sputum examination results

After the collection of sputum samples, the patient is given symptomatic and antibiotic NON-TB treatment, and asked to return to the BHU in a few days for the results of the tests.

On no account should Rifampicin or Streptomycin be used.

1.1.10 Reporting of Results

The results of the examination will be reported from the laboratory to the BHU on the same accompanying list which the BHU sent with the transport box.

- **If the result is positive for AFB**, start the patient on TB treatment (see section 2).

- **If the results are negative**, and the patient has improved on the symptomatic treatment, continue or finish the treatment as appropriate. If the patient has deteriorated or is no better, repeat the sputum tests and give non TB treatment for one more week. Remember that a patient who has TB may become sputum positive at any time.

1.2 Pulmonary Sputum Smear Negative Cases by Chest X-Ray

If all the sputum specimens are negative on microscopic examination and the attending person continues to have "chest symptoms" under a symptomatic treatment, he or she must be referred for Chest X-ray to the nearest X Ray-unit. If this is not possible, wait for the mobile Mass X Ray Unit to visit, but recheck the sputums each month if symptoms continue.

a) **Persons with normal chest X-Ray** will receive symptomatic treatment.

b) **Persons with an abnormal pathology (but not TB)** on chest X-Ray, should receive appropriate treatment.

c) **Persons with chest X-Ray suggestive of TB** should be started on TB treatment (section 2.2), **provided that the X-Ray film has been checked by a TB specialist within the Programme. The X-Ray must be kept with the patient's notes at the BHU.**

1.3 Extra Pulmonary TB

In extra-pulmonary tuberculosis, the infection is localized in organs other than the lungs; in most cases the lungs are not involved.

For case-finding activities, persons with extra-pulmonary TB fall into two groups:

1) **Extra-pulmonary tuberculosis without "chest symptoms"**

In most cases the lungs are not involved and the patient is not excreting TB bacilli and cannot infect other people. Start TB treatment only after consultation with a TB specialist within the Afghan Refugee Health Programme (ARHP).

2) **Extra-pulmonary tuberculosis with "chest symptoms"**

In a few cases the lungs are involved. Ask for sputum specimens (see section 1.1) and if positive, treat immediately with short course (see section 2.2); if negative, start TB treatment after consultation with a TB specialist in the ARHP.

1.3.1 TB Adenitis

TB adenitis is usually found in children and not in adults. It is rare in people over 30. TB causes enlarged lymph nodes, usually in the neck, which are painless and non-tender; sinus formation is common. Always try to exclude other causes by careful history and examination, and a course of NON TB antibiotics for at least 15 days. If possible, send the person for a biopsy.

1.3.2 TB of Bones and Joints

TB can affect a large joint and the bone nearby or the spine. It is not possible to make the diagnosis of joint and bone TB on clinical grounds. An X-Ray is mandatory before starting treatment and this must be checked by the TB specialist in the programme.

1.3.3 Other types of Extra-Pulmonary TB

TB can affect kidneys, intestine, skin etc.; in such cases proper diagnosis must be made in a referral hospital before treatment is started.

1.4 Children and Tuberculosis

1.4.1 Diagnosis

TB is difficult to diagnose in children. Usually sputum cannot be obtained from children. Therefore diagnosis of TB in children must be based on the following three elements:

1) Clinical symptoms (see para 1.4.2)
2) Chest X-rays (see para 1.4.3)
3) Tuberculin test (see para 1.4.4)

If, however, the child is producing sputum, send the samples to the laboratory for checking. If these are positive, treat with short course regimen (see section 2.2).

Always think of TB in children who have been sick for a long time, especially those who are contacts of sputum positive TB patients.

1.4.2 Symptoms of TB in children

1) **Losing weight**: a child with TB does not grow normally. Usually weight loss occurs so that the growth curve falls. Sometimes the child is severely malnourished..
2) **The "ill" child**: who is irritable and "not well" often refusing to eat or run about or play normally.
3) **Cough or wheezing** : coughs are common and there is no need to think a child might have TB until he has been coughing for a month or more.
4) **Fever** : this is usually mild, and comes and goes.
5) **Pneumonia** which is not cured by non-TB antibiotics.
6) **Failure to recover** from measles or whooping cough.

The first 4 symptoms are the most common; they last for several weeks and there are usually several of them.

A child who might have TB, should have a good history taken and be examined thoroughly to make sure he does not have any other diseases such as malaria, urinal tract infections, typhoid, whooping cough etc., or is malnourished because of poor feeding. Take a good feeding history and weight the child. Give appropriate feeding advise and if he might have a bacterial infection he should be treated with an antibiotic (such as cotrimoxazole) for two weeks, and his weight then checked again. If he does not gain weight and his symptoms do not go and other diagnoses have been excluded, he should be sent for a chest X-ray or referred to hospital.

1.4.3 Chest X-Rays in Children

A chest X-Ray in children with the above mentioned symptoms can assist in making the diagnosis, since sputum is difficult to obtain and often negative in children. The **chest X-Ray must be evaluated by a TB specialist in the programme** since interpretation is very difficult.

1.4.4 Tuberculin test

Any child whom you think might have TB and who does not have a BCG scar, should have a tuberculin test (Mantoux) done, using 2 TU PPD.

A "negative" Mantoux test (0-9 mm of induration) indicates that the child has not been infected with virulent TB bacilli. However a negative Mantoux test may occur in infected children recovering from measles or whooping cough. Children who are severely malnourished, or have TB meningitis or generalized miliary TB may also have a negative Mantoux test.

A "positive" Mantoux test (induration of 10 mm and greater) in non-BCG vaccinated children means past or present infection with tubercle bacilli (but not always active disease now).

If a child has a positive Mantoux test and is 1 year old, or less, he should be treated for TB (see 2.1).

If a child has a positive Mantoux test and is more than 1 year old, follow the steps described in 1.4.2 and 1.4.3.

All children should be referred to a TB specialist within the ARHP before TB treatment is started, to have the diagnosis confirmed and dosages of medicines checked.

A positive Mantoux test in BCG vaccinated children has no diagnostic value. Never do a Mantoux in children who have a BCG scar.

1.4.5 BCG Vaccination

BCG vaccination gives some protection to children against tuberculosis and should be performed as soon as possible, better at birth. Also all child contacts of a sputum positive TB patient must receive BCG vaccination if they have no BCG scar nor symptoms of TB (but see section 2.6 for newborn babies). BCG reduces the chance of catching TB and helps prevent haematogenous spread and hence serious complications such as TB meningitis, which often kill children; it does not always prevent them completely from developing pulmonary TB. So if a child has a BCG scar, he does not exclude the diagnosis of TB - he could still have TB.

1.4.6 Extra Pulmonary TB in Children

As well as lymphadenitis and bone TB, which present and should be diagnosed in the same way as in adults, TB can present in children as:

1) **Phlyctenular conjunctivitis**: a small, painful, yellow swelling on the white of the eye close to the cornea.
2) **TB meningitis**: when you suspect tuberculous meningitis, immediately refer the patient to a hospital.

1.5 Referred Patients

If the diagnosis of TB has been made by the TB referral centre or by another BHU within the ARHP, and the patient has documentation of this, he can be accepted for continuation of treatment at the BHU. This patient is considered as "transferred in" (see section 4.6).

However if the diagnosis was made elsewhere (for example by a private practitioner) or the patient has no documentation, the diagnosis cannot be accepted and the patient must follow the full diagnostic procedures described in this section before any further treatment is given (i.e. sputums for microscopy, chest X-ray etc.). If he brings his own chest X-ray this should be rechecked by the TB specialist in the programme. Only short course or standard regimens should be prescribed. On no account should suggestions of different regimens be accepted. In case of drug resistance proved by a reliable laboratory, consult the TB specialist in the ARHP before starting treatment.

2. TREATMENT OF TUBERCULOSIS

Proper treatment of tuberculosis is important for the health of the individual and of the community. **Each infective TB patient who is not treated may infect ten to twelve people in his family and community in one year.** Through regular and continuous chemotherapy of all infectious cases the transmission of TB bacilli from person to person will be stopped.

2.1 Categories of patients to be treated

The patients who are to receive treatment for tuberculosis can be classified into five categories **according to laboratory, chest X-Ray examination, and physical findings. These** five are: (1) Sputum Smear Positive, (2) Sputum Smear Negative, Chest X-ray Suggestive with Chest Symptoms, (3) Extra-Pulmonary, (4) Children, (5) Pregnant Women.

A description of the treatment of these people is as follows:

Category 1: **Sputum Smear Positive Pulmonary TB**

Sputum smear positive means that there are many tubercle bacilli in the sputum and are detected by microscopic examination. This patient is **very infectious** to other people. TB treatment should be started immediately with the 8 months short course regimen.

Category 2: **Sputum Smear Negative & Chest X-Ray Suggestive**

Sputum smear negative, chest X-ray suggestive and chest symptoms means that no tubercle bacilli were found in the sputum smear, but the chest X-ray suggested tuberculosis and the person also has one or more of the following chest symptoms:

- Cough for two weeks or more;
- Chest pain for two weeks or more;
- Fever for two weeks or more;
- Blood in the sputum (haemoptysis).

Treat the patient with a course of a non-TB antibiotic for at least one week, and when this is finished, repeat the sputums. If these are also negative and the patient is still symptomatic, start the patient on TB treatment (twelve months standard treatment regimen, see 2.2.2)



AFGHAN REFUGEES
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Guidelines

TUBERCULOSIS
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